

## CORRESPONDENCE.

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### AN ARTIFICIAL HAND OF THE MIDDLE AGES.

THE accompanying illustrations afford us a material demonstration of the efforts of our confrères in by-gone times to substitute artificial limbs for such as may have been lost in warfare or by other means.

Although prosthetic appliances seem to have been known in very early times, the first attempts to replace mutilated extremities by mechanical appliances do not apparently antedate the beginning of the sixteenth century, and the earliest artificial hand with mechanical attachments of which we have any definite knowledge is that which has become famous by its association with the old knight, Goetz von Berlichingen. This has been carefully described and illustrated in a work by Karpinski, a German military surgeon (Berlin, 1881). His diagrammatic studies show that this particular hand was provided with a number of buttons and levers with the assistance of which certain movements could be accomplished. In this same book is also figured an earlier mechanical hand dating back to the fifteenth century and from an unknown source. These seem to be among the earliest known artificial hands about which any information has descended to us. It is probable that these and similar contrivances were made by armorers, who would naturally be most proficient in adapting their methods to this form of prosthetic appliances.

The contrivance from which the accompanying photographs were made was kindly loaned to the writer by Dr. Bashford Dean, curator of arms and armor at the Metropolitan Museum of Art, New York, and is believed by him to be of German origin. It is of a very primitive construction, but the modelling of the wrist is quite noteworthy, as may be gathered from the delicate protrusion on the outer side of the hand, corresponding to the ulnar eminence. The fingers have each two articulations which are so arranged that although almost complete flexion is possible, extension beyond the normal cannot occur. The thumb has no

articulations and it is probable that the wearer of this appliance was still provided with this digit and could fix it in the appropriate opening. The short distance from the wrist to the edge of the cuff also adds to the testimony that probably only the fingers and part of the hand were absent in the original subject, because a much greater length of cuff would have been necessary if the limb had been shorter. The material from which the hand is made is a fine quality of what seems to be cast steel, as no joints can be detected. The openings in the cuff were probably for the adjustment of leather thumbs and no traces can be found of any mechanism such as springs or other contrivances for communicating any motion to the artificial fingers.

The specimen constitutes a most interesting relic of the past and shows the assistance rendered to prosthetic surgery of those days by the armorers' craft.                      GEORGE W. KOSMAK, M.D.

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